We claim:

1. A fuel cell system comprising:

a fluidization apparatus having therein metal particles and electrolyte;

an electrochemical cell stack in fluid communication with the fluidization apparatus, the stack comprising an anode and a cathode;

a fuel delivery pump; and

a fluidization pump, wherein the fluidization pump provides a stream comprising electrolyte to the fluidization apparatus at an orientation suitable for fluidizing at least a portion of the metal particles in the fluidization apparatus, and wherein a portion of the fluidized metal particles and electrolyte can be delivered to the anode of the electrochemical cell stack by the fuel delivery pump.

2. The fuel cell system of claim 1 wherein the container further comprises a fluidization jet connected to fluidization pump for introducing the electrolyte stream into the container.

3. The fuel cell system of claim 2 wherein the fluidization jet is oriented in an upward direction.

4. The fuel cell system of claim 1 wherein the fluidization apparatus further comprises a spout tube having a first end and a second end, wherein the first end is positioned such that at least a portion of the fluidized metal particles enter the first end.

5. The fuel cell system of claim 4 wherein the fluidization apparatus further comprises a baffle positioned adjacent the second end of the spout tube for redirecting a portion of the fluidized fuel particles exiting the second end of the spout tube.

6. The fuel cell system of claim 5 wherein the fluidization apparatus further comprises a feed tube that passes through a surface of the container such that a flow pathway for the fluidized metal particles and electrolyte out of the container is established.

7. The fuel cell system of claim 6 wherein the feed tube is positioned adjacent the second end of the spout tube.

8. The fuel cell system of claim 7 wherein the feed tube further comprises a feed hole which provides access to the interior of the feed tube.

9. The fuel cell system of claim 6 wherein the fuel delivery pump is connected to the feed tube to facilitate the flow of the fluidized metal particles into the feed tube.

10. The fuel cell system of claim 1 wherein the metal particles comprise zinc, an alloy of zinc or a combination thereof.

11. A particle delivery system comprising:

a fluidization apparatus having therein metal particles and electrolyte, wherein the fluidization apparatus comprises a fluidization jet which provides a stream comprising electrolyte suitable for fluidizing at least a portion of the metal particles in the container, and a feed tube that passes through a surface of the fluidization apparatus and provides a flow path out of the fluidization apparatus, wherein the feed tube comprises an opening positioned to receive a portion of the fluidized particles.

12. The particle delivery system of claim 11 wherein the fluidization jet is oriented in an upward direction.

13. The particle delivery system of claim 11 wherein the container further comprises a spout tube having a first end and a second end, wherein the first end is oriented towards the fluidization jet.

14. The particle delivery system of claim 13 wherein the container further comprises a baffle positioned adjacent the second end of the spout tube.

15. The particle delivery system of claim 14 wherein the feed tube is connected to the baffle and is positioned adjacent to the second end of the spout tube.

16. The particle delivery system of claim 15 wherein the feed tube further comprises a feed hole located on a side of the feed tube opposite the baffle which provides access to the interior of the feed tube.

17. The particle delivery system of claim 13 wherein the fluidization apparatus further comprises a spout tube support which holds the spout tube in a desired position within the fluidization apparatus.

18. The particle delivery system of claim 17 wherein the spout tube support is positioned in the container below the baffle.

19. The particle delivery system of claim 17 wherein the spout tube support is positioned in the container above the baffle.

20. The particle delivery system of claim 18 wherein the baffle and the spout tube are connected to the spout tube support by a support rod, which permits the distance between the baffle and the spout tube to remain constant.

21. The particle delivery system of claim 11 wherein the metal particles comprise zinc, an alloy of zinc or a combination thereof.

22. The particle delivery system of claim 11 wherein the feed tube is connected to a fuel delivery pump to facilitate flow of metal particles and electrolyte through the feed tube.

23. The particle delivery system of claim 11 wherein the fluidization jet is connected to a fluidization pump which provides electrolyte to the fluidization jet.

24. The particle delivery system of claim 11 wherein the lower portion of the fluidization apparatus walls are sloped to facilitate movement of the metal particles towards the fluidization jet.

25. The particle delivery system of claim 11 wherein the feed tube further comprises a redirection tube and a fluidization tube and wherein the fluidization jet is oriented in a downward direction towards the redirection tube.

26. The particle delivery system of claim 25 wherein the redirection tube comprises a curved tube.

27. The particle delivery system of claim 25 wherein the internal diameter of the fluidization tube is larger than the internal diameter of the redirection tube.

28. The particle delivery system of claim 25 wherein the fluidization jet is oriented in a downward direction towards the redirection tube.

29. A container for a fuel cell system comprising:

fuel particles and electrolyte located within the container;

a flow tube;

a splitter element comprising a plurality of openings that permit fuel particles and electrolyte to flow out of the container; and

a plurality of suction tubes connected to the plurality of openings, wherein the plurality of suction tubes converge to connect the flow tube to the plurality of openings such that multiple flow paths from the container to the flow tube is created.

30. A method of delivering fuel and electrolyte to an electrochemical cell stack comprising:

fluidizing metal particles with a stream comprising electrolyte, wherein the stream is provided to a fluidization apparatus having therein the metal particles and electrolyte, and flowing the fluidized particles to the electrochemical cell stack.

31. The method of claim 30 further comprising pumping a portion of the fluidized metal particles through a feed tube to another component of the electrochemical cell.

32. The method of claim 30 further comprising controlling the density of the metal particles in the flow by controlling fluidization parameters.

33. The method of claim 32 wherein the fluidization apparatus comprises a spout tube, a baffle, a feed tube and a fluidization pump, and wherein the fluidization parameters are selected from the group consisting of spout tube position, spout tube diameter, baffle position, feed tube position, feed tube diameter, fluidization pump flow rate and combinations thereof.